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RESPONSE UNDER 37 CFR 1.116
EXPEDITED PROCEDURE
EXAMINING GROUP 1752
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

FRANK LEONARD SCHADT, III

CASE NO.: PE0612USPCT APPLICATION NO.: 09/807298

CONFIRMATION NO.: 5947 GROUP ART UNIT: 1752

EXAMINER: YVETTE C. THORNTON FILED: APRIL 09, 2001

FOR: PHOTORESISTS AND PROCESSES FOR MICROLITHOGRAPHY

AMENDMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Introductory Comments

This is submitted in response to the Office Action dated October 19, 2004. Applicants respectfully request reconsideration and submit the following in support thereof. Please amend the application as follows:

Sir:

Please enter 12/03/04 CAK

Amendments to Claims

1. (Previously Presented) A positive-working photoresist comprising:

(A) a branched polymer containing protected acid groups, said polymer comprising one or more branch segment(s) chemically linked along a linear backbone segment, wherein the branch segment(s) contain at least two repeating monomer units and have a number average molecular weight (Mn) of at least 1000; and

(B) at least one photoacid general

wherein the photoacid generator is covalently bonded to the branched polymer.

2. (Original) The photoresist of Claim 1 wherein one of the segments contains greater than 50% of the protected acid groups present in the branched polymer.

3. (Original) The photoresist of Claim 2 wherein the branch segment(s) contains greater than 50% of the protected acid groups present in the branched polymer.

4. (Original) The photoresist of Claim 1 wherein the branched polymer contains functional groups that are compatible with the photoacid generator, said functional groups being distributed in the branched polymer such that 25 to 100% of the functional groups are present in the segment of the branched polymer containing a majority of the protected acid groups.

5. (Canceled)

6. (Previously Presented) The photoresist of Claim 1 wherein the photoacid generator is covalently bonded to the branch segment(s).

7. (Original) The photoresist of Claim 6 wherein one of the segments contains greater than 50% of the protected acid groups present in the branched polymer.

8. (Original) The photoresist of Claim 7 wherein the branch segment(s) contain greater than 50% of the protected acid groups present in the branched polymer.

9. (Original) The photoresist of Claim 1 wherein the branched polymer is comprised of an acrylate polymer, a methacrylate polymer, an acrylate/methacrylate copolymer, and combinations thereof.

10. (Original) The photoresist of Claim 1 further comprising a solvent.

11. (Original) The photoresist of Claim 1 wherein the branched polymer is formed by addition polymerization of at least one ethylenically unsaturated macromer component and at least one ethylenically unsaturated comonomer.

12. (Original) The photoresist of Claim 1 wherein the branched polymer segment is attached to a preformed linear backbone by chemical reaction.

13. (Previously Presented) The photoresist of Claim 1 wherein

(a) the ethylenically unsaturated macromer component has a number average molecular weight (M_n) in the range of 1000 to 15,000;